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Federal Communications Commission
Office of Secretary

BY HAND DELIVERY

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W., Room TW-B204
Washington, D.C. 20554

Re: Written Ex Parte Presentation in IB Docket No. 02-10

Dear **Ms.** Dortch:

Maritime Telecommunications Network, Inc. ("MTN), by its attorneys and pursuant to Section 1.1206 of the Commission's Rules, 47 C.F.R. § 1.1206, hereby provides information of great relevance to the Commission's proceeding in IB Docket No. 02-10 regarding the use of earth stations on board vessels ("ESVs") to communicate in the 5.925-6.425 GHz ("C-band') and 14-14.5 GHz ("Ku-hand") frequency bands with satellites in the fixed-satellite service ("FSS"). The information provided in the enclosed materials concerns the emerging convergence of views within the Americas and Europe on the regulatory treatment of ESVs at C-hand and Ku-band as legitimate uses of the FSS. These views are being expressed in draft proposals to the 2003 World Radiocommunciation Conference ("WRC-03") from the respective geographic regions. WRC-03 will take action later this year on an agenda item that addresses the technical and regulatory aspects of ESV use at C-band and Ku-band.

The technical and regulatory aspects of ESVs have been under study within the International Telecommunication Union ("ITU") for more than six years. Now, both the Inter-American Telecommunications Commission ("CITEL") (which includes the United States and the other countries of the Americas) and the European Conference of Postal and Telecommunications Administrations ("CEPT") (which includes more than 40 European countries) have developed parallel draft common proposals to WRC-03 that contain the clear conclusion that ESVs at both C-band and Ku-band are to be permissible uses of the FSS and are to operate as part of FSS networks. The two attachments to this presentation contain the draft common approaches being taken respectively by CITEL and CEPT.

Attachment 1 is the U.S. proposal on the ESV agenda item for WRC-03 that will be presented to the final CITEL preparatory meeting for WRC-03 during the week of February 3-7, 2003. The proposal from the United States, but for some non-substantive reformatting, is essentially the same document that was approved as a draft Inter-American Proposal by the

CITEL WRC-03 preparatory group at a meeting in Buenos Aires, Argentina in December 2002.[1] Attahment 2 is the draft European Common Proposal on the ESV agenda item for WRC-03, as agreed by CEPT's Conference Preparatory Group Project Team 1 at a meeting in Helsinki, Finland in mid January. Like CITEL, CEPT too now proposes to treat ESVs regulatorily as components of FSS networks at C-hand and Ku-band. This proposal, which is to be finalized by CEPT's Conference Preparatory Group at a meeting in Febnrary, marks a major step toward the achievement of a consensus by WRC-03 on the regulatory treatment of ESVs and the permissible frequency bands of operation. Some technical details remain to he worked out at WRC-03 between the CITEL approach and the CEPT approach. Nevertheless, the CEPT proposal demonstrates tremendous progress toward convergence between the two key regional groups.[2]

The emerging and converging determinations within ClTEL and CEPT that ESVs are to be part of the FSS has great significance to the Commission's ongoing consideration of ESV issues. MTN strongly urges the Commission to take the determinations that ESVs are to be used as parts of FSS networks at Ku-hand and C-band, subject to certain technical conditions, into account in any notice of proposed rule making that may be forthcoming in the instant proceeding. By way of conclusion, MTN observes that the determinations regarding ESV use of FSS frequencies at C-band and Ku-band that are reflected in the ClTEL and CEPT proposals are already factored into the proposed draft licensing rules for ESVs that MTN input to the Commission last year. ***See*** *Ex* ***Parte*** Presentation of Maritime Telecommunications Networks, Inc. in IB Docket No. 02-10 (August 30, 2002) (Draft ESV Licensing Rules).

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[1] Notably, the Inter-American proposal that is expected to emerge from the February ClTEL meeting will not only clarify the Americas' view that ESVs are legitimate uses **of** the FSS at C-hand and Ku-hand, it will **also** contain technical implementation guidelines that the ITU would recommend to countries that wish to establish domestic regulations for the protection of fixed service systems when ESVs are used to communicate with FSS networks at C-band and Ku-band when in the countries' territorial waters. ***See*** Attachment **I** at U S . Proposal No. USA/1.26/7, New Recommendation [FSS/ESV], Operational Procedures for ESV Use.

[2] The Asia-Pacific Telecommunity ("APT') also has a regional role to play in the WRC-03 process. APT countries will finalize their common proposals for WRC-03 at a meeting in Tokyo in mid February, and have preliminary views from prior meetings that suggest that the regulatory treatment they embrace for ESVs will he consistent with the treatment now proposed within CITEL and CEPT.

This submission consists of the original and one copy of this letter and the enclosed CITEL and CEPT draft proposals. Please direct any questions concerning this matter to the undersigned.

Respectfully submitted,

Raul R. Rodriguez
Stephen D. Baruch
Attorneys for Maritime Telecommunications Network, Inc.

Enclosures *(2)*

cc (w/ encl.): J. Breck Blalock
Claudia Fox
Belinda Nixon
Trey Hanbury
Edward Jacobs
Lisa Cacciatore

ATTACHMENT 1

ORGANIZACION DE LOS ESTADOS AMERICANOS
ORGANIZATION OF AMERICAN STATES

Comision Interamericana de Telecomunicaciones
Inter-American Telecommunication Commission

I MEETING OF PERMANENT CONSULTATIVE COMMITTEE II: RADIOCOMMUNICATIONS INCLUDING BROADCASTING
February 3 to 7,2002
Orlando, Florida, United States

OEA/Ser.L/XVII.4.2
CCP.II-RADIO/doc. 124/03
27 January 2003
Original: English

WRC-2003 PROPOSAL FOR THE AGENDA ITEM **1.26**
DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE
CHAPTER 4

(Item on the Agenda: 5.1)

(Document submitted by the delegation of United States of America)

Agenda Item 1.26: to consider the provisions, under which earth stations located on board vessels, could operate in fixed satellite networks, taking into account the ITU-R studies in response to Resolution **82;**

Background Information: Resolves 4 of Resolution **82** states that until **WRC-03** takes further action, agreement between the administrations licensing Earth stations on board vessels **(ESVs)** and affected administrations should be reached on a bilateral or multilateral basis, in accordance with the guidelines in its Annexes 1 and 2. **ESVs** have been operating for over 10 years under national provisions (No. **4.4** of the Radio Regulations).

Several actions have taken place in ITU-R Study Groups to develop Recommendations or **CPM** text related to this agenda item. These include the development of

a. Working Party **4A** Recommendation on the Characteristics of **ESVs,** including those to be used for sharing studies at 6 GHz and 14 GHz;

b. **a** JWP 4-9S Draft New Recommendation identifying the 5 925-6 425 MHz and 14-14.5 GHz bands as suitable for ESV operations (Earth-to-space);

c. several Draft New Recommendations in Joint Working Party 4-9S on methods to be used for achieving agreement with fixed stations when ESVs are in motion near the shore, including determination **of** a distance beyond which no agreement is necessary;

d. draft **CPM** text which includes example footnotes to the Table of Frequency Allocations at 5 925-6 425 MHz and 14-14.5 GHz and two examples of a revised Resolution **82.** The first example

footnote would make compliance with the modified Resolution **82** mandatory, the second example would require "all practical steps" to comply with the Resolution. Similarly, the first of the two modified example Resolution **82s** would make the contact procedures mandatory, the second example Resolution **82** does not.

As administrations may assign frequencies for ESVs pursuant to No. **4.4** of the Radio Regulations and ESV systems are mobile, it is appropriate to inform administrations operating systems in accordance with the Radio Regulations of the operation of ESVs and to allow them to take steps to prevent the possibility **of** harmful interference from ESV systems to their systems.

In accordance with the 1982 United Nations Convention on the Law **of** the Sea (UNCLOS, 1982), the point to measure distances identified in [B]/CAN/USA / /6 Resolution **82** is the "low water mark" defined as the baseline from which the territorial sea is measured.

The proposed footnote and revisions of Resolution **82** provide for advance notice of the operation of ESV systems. A proposed Recommendation provides guidance on operational procedures to use with administrations whose systems might be affected by such ESV use. The bilateral procedure in the proposed revision of Resolution **82** will allow administrations to reach agreement on the use of ESVs so that other systems operating in accordance with the Radio Regulations are protected. Additionally, the proposed definition of ESVs is intended to clarify the status of ESVs operating within networks in the fixed-satellite service **(FSS),** and a proposed new footnote is intended to ensure the protection of adjacent satellites when ESVs are operating within **FSS** networks.

Proposal:

ARTICLE I

Terms and definitions

SECTION IV – RADIO STATIONS AND **SYSTEMS**

USA/ /1
ADD

1.68 bis ***earth station on board*** a ***vessel:*** an earth station located on board a vessel operating in certain hands of the fixed-satellite service, as distinct from a ship earth station (see **1.78**), and intended to be used while in motion or during halts at unspecified points.

Reasons: Adding this definition will ensure that the class of station and the category of allocation of both earth and space stations will be matched to each other.

Region 1	**Region 2**	**Region 3**

14-14.5 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
	Satellite Space research 5.505 5.508 5.509 **ADD** 5.ESV, **DD** 5.ESV2	
14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical Mobile Mobile-satellite (Earth-to-space) except aeronautical nobile-satellite Radionavigation-satellite	14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite	14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite

ADD 5.ESV, ADD 5.ESV2	ADD 5.ESV, ADD 5.ESV2	ADD 5.ESV, ADD 5.ESV2
14.4-14.47	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research (space-to-Earth) **ADD** 5.ESV, **ADD** 5.ESV2	
14.47-14.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radio astronomy 5.149 **ADD** 5.ESV, **ADD** 5.ESV2	

Reasons: Footnotes 5.ESV and 5.ESV2 are added to provide guidance to administrations wishing to allow the use of earth stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz while providing protection to existing users of the bands and ensuring efficient use of the GSO.

USA/1.26/4
ADD

5.ESV Administrations operating earth-stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz shall take all practicable steps to comply with Resolution **82 (WRC-03).** Such use shall not cause harmful interference to, claim protection from, **or** otherwise impose constraints on the operation or development of other radio services operating in the band 5 925-6 425 MHz and 14-14.5 GHz.

Reasons: To provide guidance to administrations wishing to allow the use **of** earth stations on board vessels in the bands 5 925-6 425 MHz and 14-14.5 GHz and provide protection to existing users of the bands.

USA/1.26/5
ADD

5.ESV1 For earth stations on board vessels (see 1.68 bis) operating in the 5 925-6 425 MHz band, at any angle φ specified below, off the main-lobe axis of an earth-station antenna, the maximum e.i.r.p. in any direction within 3" of the GSO shall not exceed the following values:

5925-6425 MHz

Angle off-axis	*Maximum e.i.r.p. per 4 kHz band*
$2.5" \leq \varphi \leq 7°$	$(32 - 25 \log \varphi)$ dB(W/4 kHz)
$7° < \varphi \leq 9.2"$	11 dB(W/4 kHz)
$9.2° < \varphi \leq 48°$	$(35 - 25 \log \varphi)$ dB(W/4 kHz)
$48" < \varphi \leq$ **180"**	– 7 dB(W/4 kHz)

5.ESV2 For earth stations on board vessels (see 1.68 bis) operating in the 14.0-14.5 GHz band, at any angle φ specified below, off the main-lobe axis of **an** earth-station antenna, the maximum e.i.r.p. in any direction within 3" of the GSO shall not exceed the following values:

14.0-14.5 GHz

Angle off-axis	***Maximum** e.i.r.p. in any 40 kHz band*
$2° \le \varphi \le 7"$	$33 - 25 \log \varphi$ dBW
$7" < \varphi \le 9.2°$	12 dBW
$9.2° < \varphi \le 48"$	$36 - 25 \log \varphi$ dBW
$\varphi > 48"$	– 6 dBW

Coordination agreements between fixed-satellite service networks under Article **9** may result in lower off-axis e.i.r.p. levels.

Reasons: In order to ensure that the off axis e.i.r.p. performance of ESVs operating in FSS networks is consistent with that of earth stations already operating in these networks in these bands, and to ensure efficient use of the GSO.

USA/1.26/6
MOD

RESOLUTION 82 (WRC-~~2000~~3)

Provisions relating to earth stations located on board vessels ~~which~~ operate~~ing~~ with fixed-satellite service networks in the bands ~~3 700-4 200~~ 5 925-6 425 MHz and ~~5 925-6 425 MHz~~ 14.0-14.5 GHz

The World Radiocommunication Conference (~~Istanbul, 2000~~ Geneva, 2003),

considering

a) that there is a demand for global wideband satellite communication services on vessels;

b) ~~that the technology exists that enables earth stations on board vessels (ESVs) to use fixed satellite service (FSS) networks operating in the 3 700-4 200 MHz and 5 925-6 425 MHz bands;~~ that ESVs are currently operating through fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz, 5 925-6 425 MHz, 10.7-12.75 GHz, and 14.0-14.5 GHz;

c) that ESVs have the potential to cause unacceptable interference to other services in the ~~band~~ 5 925-6 425 MHz and 14.0-14.5 GHz (Earth-to-mace) bands;

d) that ESVs operating in these bands require considerably less than the full bandwidth in this **FSS** allocation and only a portion of the visible geostationary arc;

~~*e)* that there are a limited number of geostationary FSS systems that have global coverage;~~

~~f)~~e) that the number of vessels equipped with ESVs may be such that the procedures could ~~as to~~ place a heavy processing burden on some administrations, especially those in developing countries;

~~g)~~*f)* that in order to ensure the protection and future growth of other services, **ESVs** ~~shall~~ should operate with requisite technical and operational constraints;

~~h)~~*g)* that, , a minimum distance ~~can be calculated~~has been identified beyond which an **ESV** will not have the potential to cause unacceptable interference to other services in the~~is~~ bands 5 925 -6 425 MHz and 14 – 14.5 GHz,

noting

a) that **ESVs** may be assigned freauencies to operate in **FSS** networks in the bands **3** 700-4 200 MHz, **5** 925-6 425 MHz, 10.7-12.75GHz, and 14-14.5 GHz ~~under~~ pursuant to No. **4.4** of the Radio Regulations and shall not claim protection from, nor cause harmful interference to, other services having allocations in these bands;

b) ~~that there is no need for new regulatory procedures~~ that existing regulatory procedures provide for **ESVs** operating at specified fixed points,

recognizing

~~a)~~ ~~that progress has been made within ITU-R in determining the technical and operational provisions under which ESVs could operate;~~ that the reference to the distances in resolves 2 is solely for the purpose of facilitating avoidance of radio interference and does not confer any territorial rights on Administrations.

~~b) that further studies are needed,~~

resolves

1 that transmissions from **ESVs** within the distances identified in ***resolves*** 2 of this resolution, be based upon the prior agreement of the concerned administrations;

~~a matter of urgency, the regulatory, technical and operational constraints to be applied to ESV operations, having regard to the provisional guidelines for ESV use in Annex 1 and the provisional technical guidelines given in Annex 2and, in particular, to determine the appropriate value for the minimum distance from ESV stations beyond which these stations are assumed not to have the potential to cause unacceptable interference to stations of other services of any administration and beyond which no coordination would be required;~~

2 ~~to invite ITU-R as a matter of urgency:~~

~~– to develop Recommendations on methods for coordination between terrestrial services and ESVs;~~

~~– to study the feasibility of mitigation techniques, such as various frequency arrangements or dual band systems, as a way to avoid the need for detailed coordination of ESVs without constraining existing services;~~

~~– to study, as a complement to the 3 700-4 200 MHz and 5 925-6 425 MHz bands, the use of other FSS allocations for ESVs transmitting in the 6 GHz and 14 GHz bands;~~

that the minimum distances from the baseline ("low water mark", as defined by the United Nations Convention on the Law of the Sea, 1982(UNCLOS, 1982)) beyond which **ESV** stations will not have the potential to cause unacceptable interference to stations of other services of any administration and beyond

which no agreement is necessary. are 300 km for the 5 925-6 425 MHz band and 125 km for the 14.0-14.5GHz band;

~~3 to invite WRC-03 to assess, in the light of these studies, the provisions under which ESVs could operate in FSS networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, without causing unacceptable interference to radiocommunication services operating in accordance with the Radio Regulations;~~

~~4 that, until a decision is adopted for ESVs by WRC-03, agreement between the administrations licensing ESVs and affected administrations should be reached on a bilateral or multilateral basis, in accordance with the guidelines in Annexes 1 and 2;~~

~~5 that, until a decision is adopted for ESVs by WRC-03, administrations licensing ESVs that enter into bilateral or multilateral agreements under resolves 4 above should ensure that, as part of the licensing process, ESVs operate in compliance with such agreements, taking into consideration the interests of concerned neighbouring countries;~~

encourages concerned administrations

to cooperate with administrations ~~which~~ that license ESVs ~~while~~ and seek~~ing~~ agreement ~~under resolves 4, the provisions of Annex 1~~ under the provisions of Recommendation FSS/ESV;

encourages ESV licensing administrations

to consider registering their ESV frequency assignments in the Master International Frequency Register, for information purposes only,

~~*urges all administrations*~~

~~to participate actively in the above-mentioned studies by submitting contributions,~~

instructs the Secretary-General

to bring this resolution to the attention of the Secretary-General of the International Maritime Organization ~~and to invite IMO to participate in the work on this issue.~~

~~ANNEX 1 TO RESOLUTION 82 (WRC-2000)~~

~~ANNEX 2 TO RESOLUTION 82 (WRC-2000)~~

USA/1.26/7
ADD

RECOMMENDATION [FSS/ESV]

Operational Procedures for ESV Use

The World Administrative Radio Conference (Geneva, 2003)

considering

a) That under the provisions of Res. **82 (Rev. WRC-03)** transmissions from ESVs within the distances of its resolves 2 be based upon prior agreement of concerned administrations;

b) that it is desirable to provide guidance on activities to achieve such prior agreement with concerned administrations:

c) that such guidance should include the operational procedures for ESV use.

recommends

I. That operation of ESVs follow the procedures set forth in Annex 1 including the typical characteristics in Annex 2.

ANNEX I

Operational procedures for ESV use

A. Initiation of Contact

When ships equipped with ESVs intend to operate in the band 5 925-6 425 MHz within 300 kilometers and in the band 14-14.5 GHz within 125 km of the baseline ("low water mark" as defined by UNCLOS, 1982) of other administrations having terrestrial stations operating in the same band as the ESV, the ESV licensing administration should contact, in advance of ESV operations within those distances, the concerned administration(s) to obtain agreements that will establish the technical bases for avoiding unacceptable interference to the terrestrial facilities of the concerned administration or administrations.

B. Recommended Actions of Licensing Administrations, ESVs operators and Concerned Administrations:

- Each Administration having terrestrial stations in these bands should have a point of contact for the ESV licensing Administration or the ESV operator to initiate discussions.

- Licensing Administration or the ESV operator should provide the following information:

    1. The technical and operational parameters including the range of its frequency operation;

    2. The proposed dates and ports to be visited and the routes of the ship(s) equipped with ESVs to reach those ports within the minimum distance from the baseline ("low water mark" as defined by UNCLOS, 1982) of the concerned Administration.

- Concerned Administrations that have terrestrial stations that could be affected by ESVs operations should do the following when contacted by the ESV licensing Administration or the ESV operator:

    1. Determine if they have terrestrial stations in the same frequency band as the ESV;
    2. Identify frequencies for ESV use that would avoid the potential for interference.

C. ESV Operating Agreements

A concerned Administration is encouraged to enter into an agreement with the ESV licensing Administration that describes the conditions for operation of the ESV when operating near the coast or in ports of the concerned Administration. These agreements should be concluded prior to the operation of the ESV stations near the coast **or** in the ports of the concerned Administration. The agreement should consider using the 5 925 – 6 425 MHz band outside certain limits and not using this band inside certain limits in countries that have fixed service stations in the same band and should include the possibility of switching to 14 – 14.5 GHz band if there are no terrestrial services in the band. The operating agreement may be revised at any time at the discretion of the concerned Administration, particularly whenever new terrestrial facilities are authorized that could potentially receive unacceptable interference.

D. Frequency Use Arrangements

National practices, as well as applicable recommendations of the ITU-R, may be used in reaching bilateral **or** multilateral frequency usage arrangements. Typical characteristics for ESV operations are contained in Annex **2.**

E. Protection from Transmissions of Other Services

ESVs are not protected from the transmissions of other services operating in the 4 GHz and 11/12 GHz bands.

F. ESV Point of Contact

Each ESV operator should provide a point of contact to the Administration with which agreements have been reached for the purpose of reporting unacceptable interference caused by an **ESV.**

G. Avoidance of Unacceptable Interference

The ESV licensing Administration shall ensure that such stations do not cause unacceptable interference to the services of other concerned Administrations. In the event that unacceptable interference occurs, the ESV operator must eliminate the source of any interference from its station immediately upon being advised of such interference, Additionally, the ESV operator must immediately terminate transmissions at the request of either the concerned Administration or the ESV licensing Administration if either Administration determines that the ESV is causing unacceptable interference or is otherwise not being operated in compliance with the operating agreement.

Additionally, ESVs stations should have the following operational capabilities:

1. The ESV system should include a means of identification and location, and automatic mechanisms to terminate transmissions whenever the station operates outside its authorized geographic area (see resolves **2** of Res. **82** (Rev. WRC-03) or operational limits).

2. The ESV system should be equipped so as to enable the ESV licensing Administration under the provisions of Article 18 to verify earth station performance and to terminate **ESV** transmissions immediately upon request by a Concerned Administration whose services may be affected.

Reasons: Provide protection to existing radio services, provide administrations operating systems in existing radio services with guidance on how to reach agreement with operators of ESV systems and provide administrations with the means to operate ESVs in the bands identified.

USA/ /8 MOD

ANNEX 2

This annex contains typical characteristics of ESV earth stations on board vessels for the 5 925-6 425 MHz and 14-14.5 GHz bands.

5 925-6 425 MHz

Minimum diameter of ESV antenna:	2.4 m
Maximum necessary bandwidth per vessel:	2.4 MHz
Maximum ESV transmitter power spectral density at the input to the antenna:	17dB(W/MHz)
Tracking Accuracy of ESV antenna	0.2"

14-14.5 GHz

Minimum diameter of ESV antenna:	1.2 m
Maximum necessary bandwidth per vessel:	2.4 MHz
Maximum ESV transmitter power spectral density at the input to the antenna:	12.5 dB(W/MHz)
Tracking Accuracy of ESV antenna	0.2"

Reasons: This annex is consistent with the ITU-R Study **Group** 4 Recommendation on ESV characteristics.

ATTACHMENT 2

TEMP 1.26 – 1 rev 1

DRAFT EUROPEAN COMMON PROPOSALS

PART [..]

Agenda Item 1.26 : to consider the provisions under which earth stations located on board vessels could operate in fixed-satellite service networks, taking into account the ITU-R studies in response to Resolution 82 (WRC-2000);

Proposals submitted by the following administrations

[.....]

SUB-PART [...x]

Introduction

Agenda item 1.26 requests to consider regulatory and technical provisions to enable earth-stations located on board vessels (ESV) to operate in fixed-satellite service (FSS) networks in the *6* and 14 GHz bands.

The ESV operation bears a great potential of interference to the fixed service applications in these hands and could constrain the FS development in the associated downlink bands if protection from the FS were to be requested.

Therefore, the use of ESVs in the uplink bands 5925 – 6425 MHz and 14 – 14.5 GHz can he allowed if it does not have the potential to cause harmful interference to the fixed service, and that ESV shall not be allowed to claim protection from the FS in the downlink 4 and 11 GHz hands. In particular, and since it is not used by the FS in CEPT, the band 14.0-14.25 GHz is preferred for use by ESVs.

This can be ensured by introducing in the RR, in an appropriate Resolution, mandatory technical and operational limitations including a "minimum distance" from the coast line (300 km in the 6 GHz band and 125 km in the 14 GHz band as agreed within ITU-R) beyond which in-motion ESVs will not cause unacceptable interference.

Europe proposes to suppress Resolution 82 and replace it with a new Resolution, attached to the existing FSS allocations in the 6 GHz and 14 GHz bands. and a footnote limiting the use of ship Earth stations in the **14** GHz band.

Proposals

1. To attach a footnote to the **FSS** allocations in the 5925-6425 MHz and 14-14.5 GHz to introduce Resolution [ESV] giving the operational and technical provisions under which ESV will be able to operate.
2. To attach a footnote to the frequency band 14 – 14.5 GHz relating to the use of ship Earth stations
3. Suppress the Resolution 82 (WRC-2000)

Taking into account the above proposals, Article 5 would be amended as follows:

MOD EUR/1.26/1

5 830-7 550 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
5 925-6 700	FIXED FIXED-SATELLITE (Earth-to-space) ADD 5.ESV MOBILE 5.149 5.440 5.458	

Reason: *To apply footnote 5.ESV in the bund 5 925-6 425 MHz.*

MOD EUR/1.26/2

11.7-14.25 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**

Allocation to services

Region 1	Region 2	Region 3
	pace research 505 5.508 5.509 ADD 5.ESV2	
14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A *5.506* ADD 5.ESV MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite ADD 5.ESV2	**14.3-14.4** FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ADD 5.ESV Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite ADD 5.ESV2	**14.3-14.4** FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 ADD 5.ESV MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite ADD 5.ESV2
14.47-145	[XED FIXED-SATELLITE (Earth-to-space) 5.484A *5.506* ADD 5.ESV MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radio astronomy 5.149 ADD 5.ESV2	

Reason: To apply footnote 5.ESV and 5.ESV2 in the band 14.25-14.50 GHz.

ADD EUR/1.26/4

5.ESV In the bands 5925-6425 MHz and 14-14.5 GHz, earth stations in fixed satellite service networks may be operated on board vessels. Such use shall be in accordance with Resolution [ESV] (WRC-2003).

Reason: To permit the use of ESVs in the bunds 5925-6425 MHz and 14-14.5 GHz and to impose the provisions of Resolution [ESV] (WRC-2003).

ADD EUR/1.26/5

5.ESV2 In the band 14-14.5 GHz, ship Earth stations with an e.i.r.p. greater than **21** dBW shall operate in accordance with Resolution [ESV]

Reason: The footnote ensures that earth stations within the maritime mobile satellite service with similar charachteristics to ESVs cannot avoid meeting the obligations of Resolution [ESV].

SUP EUR/1.26/6

RESOLUTION 82 (WRC-2000)

Provisions relating to earth stations located on board vessels which operate in fixed-satellite service networks in the bands 3700-4200 MHz and 5 925-6 425 MHz

Reason: ***It is assumed that proposing necessary modifications with revision marks to Resolution 82 would be confusing. It is rather preferred to propose a new resolution as in EUR/1.26/6.***

ADD EUR/1.26/7

RESOLUTION ESV (WRC-2003)

Provisions relating to earth stations located on board vessels which operate in fixed-satellite service networks in the uplink bands 5 925-6 425 MHz and 14-14.5 GHz

The World Radiocommunication Conference (Geneva, 2003),

considering

a) that there is a demand for global wideband satellite communication services on vessels;

b) that the technology exists that enables earth stations on hoard vessels (ESVs) to use fixed-satellite service **(FSS)** networks operating in the uplink bands ***5*** 925-6 425 MHz and 14-14.5 GHz;

c) that ESVs have the potential to cause unacceptable interference to other services in the bands 5 925-6 425 MHz and 14-14.5 GHz;

d) that with respect to the bands considered in this Resolution global coverage is only available in the hand 5 925-6 425 MHz and that only a limited number of geostationary **FSS** systems can provide such global coverage;

e) that without special regulatory provisions ESVs could place a heavy coordination burden on some administrations, especially those in developing countries;

f) that in order to ensure the protection and future growth of other services, ESVs shall operate with requisite technical and operational constraints;

g) that, based on agreed technical assumptions, minimum distances from the coast have been calculated, within ITU-R studies, beyond which an ESV will not have the potential to cause unacceptable interference to other services in the bands ***5*** 925-6 425 MHz and 14-14.5 GHz,

noting

that the regulatory procedures of Article 9 apply for ESVs operating at specified fixed points,

resolves

that ESVs transmitting in the 5 925-6 425 MHz and 14-14.5 GHz bands shall operate under the regulatory and operational provisions contained in Annex 1 and the technical constraints in Annex 2 of this Resolution,

encourages concerned administrations

to cooperate with administrations which license ESVs while seeking agreement under these provisions,

instructs the Secretary-General

to bring this Resolution to the attention of Secretary-General of the International Maritime Organisation (IMO).

ANNEX 1 TO RESOLUTION [ESV]

Regulatory and operational provisions for ESV transmitting in the 5 925-6 425 MHz and 14-14.5 GHz bands

1 The administration that issues the licence for the use of ESVs in these hands (licensing administration) shall ensure that such stations follow the provisions of this annex and thus do not present any potential to cause unacceptable interference to the services of other concerned administrations.

2 ESVs service providers shall comply with the technical limitations listed in Annex 2 and, when operating within the minimum distances as identified in item 4 below, with the additional limitations agreed by the licensing and other concerned administrations.

3 In the associated downlink bands, **3** 400-4 200 MHz and 10.7-12.75 GHz, ESVs in motion shall not claim protection from transmissions of terrestrial services operating in accordance with the Radio Regulations.

4 The minimum distances from the coast line beyond which ESVs can operate without the prior agreement of any administration are 300 km in the 5 925-6 425 MHz band and 125 km in the 14-14.5 GHz band. Any transmissions from ESVs within the minimum distances shall be with the prior agreement of the concerned administration(s).

5 The potentially concerned administrations referred to in the previous item 4 are those where fixed or mobile services are allocated in the Table of Frequency Allocations of the Radio Regulations:

Freqnencybands	Potentially concerned Administrations
5 925-6 425 MHz	**All** three Regions
14-14.25 GHz	Countries listed in No. **5.505**
14.25-14.3 GHz	Countries listed in Nos. **5.505**, **5.508** and **5.509**
14.3-14.4 GHz	Regions 1 **and** *3*
14.4-14.5 GHz	**All** three Regions

6 Administrations, in applying the minimum distance referred to in item 4 above, are encouraged to exclude those pacts of their territory, such as remote small islands, where terrestrial services in the bands 5 925-6 425 MHz and 14-14.5 GHz are neither operating nor planned.

7 The **ESV** system shall include means of identification and mechanisms to terminate transmissions, on a mandatory basis, whenever the station operates outside its authorized geographic (see item 4 above) or operational limits.

8 Termination of transmissions as referred to in item 7 above shall be implemented in such a way that the corresponding mechanisms can not be by-passed on hoard the vessel, except under the provisions of No **4.9;**

9 ESVs shall be equipped so as to enable the licensing administration under the provisions of Article **18** to verify earth station performance and to terminate **ESV** transmissions immediately upon request by an administration whose services may be affected.

10 When ESVs operating beyond the territorial waters but within the minimum distance (as referred to in item 4 above) fail to comply with the terms required by the concerned administration pursuant to items 2 and 4, then that administration may:

– request the **ESV** to comply with such terms or cease operation immediately; or

– request the licensing administration to require such compliance or immediate cessation of the operation.

ANNEX 2 TO EXAMPLE RESOLUTION [ESV]

Technical limitations applicable to ESVs transmitting in the bands 5 925-6 425 MHz and 14-14.5 GHz

	5925-6425MHz	14-14.5 GHz
Minimum diameter of **ESV** antenna*	1.2 m	0.6 m
Maximum occupied bandwidth per vessel	**2.4** MHz	2.4 MHz

Tracking accuracy of **ESV antenna**	± *0.2"* **peak**	± 0.2" **peak**
Maximum ESV e.i.r.p. **spectral density** toward **the horizon**	**17** dB(W/MHz)	**12.5** dB(W/MHz)